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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 832,116	04/11 2001	Manabu Takayama	862.C2202	1587

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EXAMINER

YAM, STEPHEN K

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,116

Applicant(s)

TAKAYAMA ET AL.

Examiner

Stephen Yam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 12-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 11 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Claims 12-16 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the various embodiments are so closely related as to not require separate fields of search. This is not found persuasive because the various embodiments are classified in different areas and therefore would require an excessive search.

2. Claims 1-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in Paper No. 7.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the gate for a resin material in a completed optical scale must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

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1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

1. Claims 13 and 16 is objected to because of the following informalities:
In Claim 13, line 3, "rotating" is misspelled as "rotting".
In Claim 16, line 3, "the same holding member" and "said bearing" lack proper antecedent basis, and are only introduced previously in Claim 15, although both claims depend from Claim 12.
For examination purposes, Examiner assumes Claim 16 to depend from Claim 15.
2. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe US Patent No. 4,780,610.

Regarding Claim 12, Abe teaches an optical scale having (see Fig. 1 and 2) a reflecting portion (31) for reflecting light emitted from a light-emitting portion of a sensor (21) having the light-emitting portion and a light-receiving portion and returning the light to the light-receiving portion (see Col. 8, line 66 to Col. 9, line 4), wherein a shaft holding portion (center of code plate

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(D)) of the optical scale which holds a shaft (33) for rotating the optical scale and the reflecting portion are integrally molded by using a resin (see Col. 7, lines 44-45 and Col. 8, lines 1-3 and 15-17), and said shaft holding portion and said reflecting portion are formed on a single surface (D) of the optical scale.

Regarding Claim 15, Abe teaches (see Fig. 2) the shaft holding portion coupled to a bearing (34) inner ring portion for rotatably holding the optical scale.

Regarding Claim 16, Abe teaches the sensor (21) disposed on the same holding member as that for said bearing for rotatably supporting the optical scale.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loewen US Patent No. 4,952,799 in view of Nomura et al. US Patent No. 6,055,111.

Loewen teaches (see Fig. 1) an optical scale having a reflecting portion (32) (see Fig. 2) for reflecting light emitted from a light-emitting portion (29) of a sensor (28, 29) having the light emitting portion and a light-receiving portion (28) and returning the light to the light-receiving portion, wherein a shaft holding portion (16) of the optical scale which holds a shaft (11) for rotating the optical scale and the reflecting portion are formed on a single surface of the optical scale. Regarding Claim 13, Loewen teaches (see Fig. 1) the shaft holding portion having a

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closed-end concave portion (lower-left section of (16)) fitted on the shaft for rotating the optical scale, and a gate (17) for a resin material being disposed at the concave portion. Regarding Claim 14, Loewen teaches (see Fig. 1) the shaft holding portion having a convex portion (top and right section of (16)) fitted to the shaft for rotating the optical scale. Loewen does not teach the embodiment having the shaft holding portion integrally molded to the reflecting portion by using a resin- however, Loewen teaches the shaft holding portion and the reflecting portion able to made integrally of molded plastic (resin) (see Col. 3, lines 38-39). Loewen also does not teach a gate for a resin material being disposed at the convex portion. Nomura et al. teach (see Fig. 4) an optical element (30) molded from resin (see Col. 4, lines 38-47) using a gate (50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrally mold the shaft holding portion to the reflecting portion using a resin and a gate in the optical scale of Loewen, to provide structural integrity to the optical scale and form the entire scale using injection molding in a common, well-known, cost-effective molding process.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abe in view of Kurosawa et al. US Patent No. 5,038,031 and Nomura et al.

Abe teaches an optical scale having a reflecting portion and a shaft holding portion, wherein the shaft holding portion and the reflecting portion are integrally molded using a resin and are formed on a single surface of the optical scale. Abe also teaches the shaft holding portion having a concave portion (see Fig. 2) fitted on the shaft for rotating the optical scale. Abe does not teach the concave portion as closed-ended, or a gate for a resin material. Kurosawa et al. teach an optical scale (31) with a reflecting portion (see Fig. 3) and a closed-end shaft

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holding portion (leading through end of shaft) (see Fig. 8). Abe and Kurosawa et al. do not teach a gate for a resin material. Nomura et al. teach (see Fig. 4) an optical element (30) molded from resin (see Col. 4, lines 38-47) using a gate (50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the shaft holding portion as closed-ended as taught by Kurosawa et al. and mold the scale using a gate as taught by Nomura et al. in the optical scale of Abe, to prevent the shaft from passing through the optical scale to ensure constant angular velocity through equal weight distribution of the optical scale and also to provide a more compact scale, and to form the entire scale using injection molding in a common, common, well-known, cost-effective molding process.

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishihara et al. US Patent No. 5,086,221, teach an optical scale with a reflecting portion and a shaft holding portion integrally molded from resin.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (703)306-3441. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703)308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7724 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

SY

October 18, 2002


DAVID PORTA
SUPERVISOR/PATENT EXAMINER
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